

BMJ Open Long COVID in long-term care: a rapid realist review

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To cite: Fyffe I, Sorensen J, Carroll S, *et al.* Long COVID in long-term care: a rapid realist review. *BMJ Open* 2023;**13**:e076186. doi:10.1136/bmjopen-2023-076186

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2023-076186>).

Received 31 May 2023
Accepted 30 November 2023

ABSTRACT

Objectives The goals of this rapid realist review were to ask: (a) what are the key mechanisms that drive successful interventions for long COVID in long-term care (LTC) and (b) what are the critical contexts that determine whether the mechanisms produce the intended outcomes?

Design Rapid realist review.

Data sources Medline, CINAHL, Embase, PsycINFO and Web of Science for peer-reviewed literature and Google for grey literature were searched up to 23 February 2023.

Eligibility criteria We included sources focused on interventions, persons in LTC, long COVID or post-acute phase at least 4 weeks following initial COVID-19 infection and ones that had a connection with source materials.

Data extraction and synthesis Three independent reviewers searched, screened and coded studies. Two independent moderators resolved conflicts. A data extraction tool organised relevant data into context-mechanism-outcome configurations using realist methodology. Twenty-one sources provided 51 intervention data excerpts used to develop our programme theory. Synthesised findings were presented to a reference group and expert panel for confirmatory purposes.

Results Fifteen peer-reviewed articles and six grey literature sources were eligible for inclusion. Eleven context-mechanism-outcome configurations identify those contextual factors and underlying mechanisms associated with desired outcomes, such as clinical care processes and policies that ensure timely access to requisite resources for quality care delivery, and resident-centred assessments and care planning to address resident preferences and needs. The underlying mechanisms associated with enhanced outcomes for LTC long COVID survivors were: awareness, accountability, vigilance and empathetic listening.

Conclusions Although the LTC sector struggles with organisational capacity issues, they should be aware that comprehensively assessing and monitoring COVID-19 survivors and providing timely interventions to those with long COVID is imperative. This is due to the greater care needs of residents with long COVID, and coordinated efficient care is required to optimise their quality of life.

INTRODUCTION

The COVID-19 pandemic has had an unprecedented impact on long-term care (LTC) homes. At the beginning of the pandemic,

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ Findings from the literature were validated by subject matter experts.
- ⇒ Diverse sources of data were included in the search, including grey literature.
- ⇒ The review was conducted by an embedded research team in a health authority with strong ties to knowledge end-users.
- ⇒ Only 21 documents were found during the review that met our inclusion criteria.
- ⇒ Long COVID in long-term care is a sparse area of research.

81% of COVID-19 deaths occurred in LTC residents in Canada compared with 38% in other countries.¹ Despite this proportionally high mortality rate, most residents survive COVID-19 infection, although little is known about COVID-19 survivorship, particularly in the LTC context.² As such, our team based in Canada was motivated to conduct a review of the international literature to better understand COVID-19 survivorship and best practices for residents in LTC homes.

One of the most concerning aspects of COVID-19 survivorship is post-COVID syndrome. Although some major national and international organisations have offered working definitions of post-COVID syndrome,³⁻⁵ a universally accepted time frame, nomenclature and set of diagnostic criteria is lacking. What is known is that a notable proportion of LTC residents who survived COVID-19 infection experienced the persistence of COVID-19 symptoms beyond the acute phase,⁶ otherwise known as long COVID. While some studies identified more than 200 possible persistent symptoms⁷ fatigue and breathlessness were among the most prevalent.^{8,9} Additionally, long COVID is associated with new long-term health problems and adds to the burden of multimorbidity.¹⁰



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Maximising the quality of life of LTC residents with long COVID is an imperative responsibility of the LTC sector including decision-makers, clinicians and direct care providers. The programme theory and context-mechanism-outcome-configurations (C-M-O-Cs) from this rapid realist review (RRR) can guide policy and practice with respect to better, evidence-informed care of the LTC population with long COVID symptoms. The research team, comprised predominantly of Canadian subject matter experts and researchers, acted as a lens for validating our programme theory. In addition, we created an advisory group, including a long COVID international subject matter expert, to validate the utility of our programme theory and C-M-O-Cs with respect to best practices and up-to-date knowledge from other countries.

METHODS

We constructed an RRR using the 10 steps for RRR described by Saul *et al*¹¹ as well as the RAMESES II guidelines.¹² These steps include: (1) development of the project scope, (2) development of specific research questions, (3) identification of how the findings and recommendations will be used, (4) development of search terms, (5) identification of articles and documents for inclusion in the review (published and grey), (6) quality review, (7) data extraction, (8) validation of findings, (9) synthesis of findings and (10) dissemination of results. We believe that RRR was the most appropriate method for achieving our aims because the distillation of interventions into context-driven (C) mechanisms (M) with specific outcomes (O) allowed for the refinement of a programme theory, which was applicable to the complex LTC landscape. This theory allowed for a greater understanding of the ways in which outcomes arise in specific contexts. Other linear and less theoretical approaches, such as a scoping review, would have failed to produce such a deep and comprehensive understanding of the phenomena of long COVID in LTC. The following sections summarise key steps of the RRR.

Development of the project scope

An initial programme theory (IPT) was developed based on key evidence identified by subject matter experts on our team. Sources of evidence included a nested case-control study of an Italian nursing home that illustrated different levels of functional ability for long COVID survivors versus uninfected residents.¹³ Another key document was the WHO presentation on long COVID rehabilitation interventions.¹⁴ These documents guided our creation of an IPT based on long COVID LTC residents' health trajectory. Lastly, we then undertook a scoping of the literature to probe for evidence relevant to our IPT.

Development of specific research questions

The specific research questions guiding this review are:

1. What are the key mechanisms that drive successful interventions for long COVID in LTC.
2. What are the critical contexts that determine whether the mechanism produces the intended outcome?

Identification of how the findings and recommendations will be used

The findings will be shared with different administrative jurisdictions with LTC responsibilities across Canada. Our goal is to promote awareness and integration of the key recommendations.

Development of search terms

The development of search terms was an iterative process conducted by a research librarian and guided by the research team. Search terms included, but were not limited to, “long-term care”, “nursing home”, “skilled nursing facility” as well as “long COVID”, “COVID-19 sequelae”, “post-acute COVID”, “COVID-19 survivor”, “post-COVID condition” and “post-COVID syndrome”.

Identification of articles and documents for inclusion in the review (published and grey literature)

Our inclusion criteria were articles or reports that explicitly addressed: (1) residents of LTC, (2) long COVID or post-acute phase at least 4 weeks following initial COVID-19 infection and (3) an intervention focus. We excluded articles that were: (1) not in the English language, (2) animal studies, (3) study protocols or (4) conference abstracts. Two reviewers screened the articles first at the title and abstract level followed by a full-text review. Articles that met the eligibility criteria and no exclusion criteria were included at each stage. Conflicts were resolved through discussion with a third reviewer until consensus was reached at each stage.

The following electronic databases were searched electronically as of 10 May 2022 and second as an update on 23 February 2023: the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Embase, MEDLINE, PsycINFO and Web of Science (see online supplemental file 1). We used COV-DENCE data management software to arrange the citations, remove duplicates, track the screening and conduct full-text reviews. Grey literature was found by searching Google, and the first 100 results of 6 different search strings (“long-term care AND long COVID”, “nursing home AND long COVID”, “long-term care AND post acute”, “nursing home AND post acute”, “long-term care AND post COVID”, as well as “nursing home AND post COVID”) were screened. All items were agreed on for inclusion by two screeners. We also handsearched the PLOS One database and specific journal tables of contents (*Journal of the American Medical Directors Association*, *Journal of Nursing Homes Research*, *European Geriatric Medicine*, *Journal of Long Term Care*, *Journal of the American Geriatric Society* and *Clinics in Geriatric Medicine*) with the parameters from January 2020 to February 2023.

Quality review

Since realist syntheses do not exclude potential sources of information based on study design, both grey and scholarly literatures were included based on relevance and rigour. Sources were considered relevant if they met the inclusion criteria and included an intervention that contained information that extended, supported or challenged the IPT.¹⁵ Further, all C-M-O-Cs generated from these published and grey literature sources were validated by external content experts including academics and physicians. However, quality appraisal of realist review documents considers their relevance to the review questions and the rigour with which they were conducted. One way to ensure rigour and relevance is via completeness of reporting, including use of realist RAMESES II standards.¹²

Extraction of data from the literature using an extraction template

We used a Microsoft Excel data extraction template associated with our research questions. These data were helpful in the iterative creation of a programme theory diagram and glossary (see online supplemental file 2).

Validation of findings with content experts, final synthesis and dissemination

The final programme theory and related C-M-O-Cs were reviewed and validated by subject matter experts on our team. These C-M-O-Cs, or statements based the findings, are the focus of RRRs. These statements are key because they explain the outcomes that occur in specific context when a mechanism or human factor, is triggered. In addition to our research team, we had a panel of experts on LTC delivery and/or long COVID management in residents, who helped us refine our final programme theory and C-M-O-Cs.

RESULTS

After removing duplicates, 618 unique articles were screened in COVIDENCE. Following the screening process, 15 peer-reviewed articles met the inclusion criteria. An additional six grey literature sources were included and two scholarly articles following the hand-search. Our synthesis results are derived from these 21 sources. This process is outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram in figure 1. Characteristics of included sources are outlined in table 1. No articles were found through forward or backward citation searches.

The underlying mechanisms associated with enhanced outcomes for LTC long COVID survivors were: awareness, accountability, vigilance and empathetic listening. The following sections present our C-M-O-Cs with key mechanisms italicised.

Awareness

One of the most important mechanisms identified in this RRR is awareness. Awareness refers to the recognition of the impact that long COVID has on LTC residents and their additional care needs.⁶ Without awareness, stakeholders at different health systems levels may be unable to recognise and respond to the unique care needs of LTC residents with long COVID.

C-M-O-C: When regional healthcare systems recognise the need for additional healthcare services over an extended period of time for LTC residents with long COVID (C), clinical policies and care processes will be established and resources allocated to ensure better safe, quality care for affected residents (O), due to heightened *awareness* of system demands (M).^{6,16}

Lack of awareness, however, may also be present among LTC direct care staff and on-site leadership due to lack of frequent assessments and subsequent lack of knowledge about residents' status changes. Situational awareness in healthcare refers to providers' heightened awareness of contextual factors that increase the potential of harm and adverse outcomes.¹⁷ Lack of situational awareness in LTC among those with long COVID can be detrimental to the well-being of residents. This is because long COVID in LTC is associated with decreased quality of life,⁹ increased frailty,¹³ exacerbation of existing morbidities,¹⁸ increased risk of falls¹⁹ and increased pain.²⁰ Educational interventions, such as clinical practice protocols and ongoing professional development, are ways to raise LTC staff and leadership situational awareness.²¹

C-M-O-C: If the LTC setting has organisational alignment and adequate organisational capacity to support a culture of learning and engagement with continuing education and training (C), then new knowledge about long COVID in LTC will be translated into practice (O), due to greater *situational awareness* (M) of residents' care needs.²

Accountability

An accountability regime is based on three components: goals or objectives, monitoring and consequences.²² Awareness of adverse outcomes associated with long COVID requires accountability at all systems levels.²³ At the microlevel, accountability is the 'responsibility for individual actions and behaviours'²⁴ (p. 26). However, organisational accountability entails the commitment and capacity to provide high-quality service. As stated by Genovese *et al*²³ (2017, p. 3), 'Accountability has evolved from an individual to a collective dimension, namely a concept in which all providers, in concert with healthcare institutions, work collaboratively to share responsibility for transparency, error prevention and 'making the patient whole'. An example from the UK is clinical protocols where residents with known COVID-19 infection should be comprehensively assessed.⁵ It is recommended that this occurs from 4 to 6 weeks after initial infection or a return from an acute care setting following COVID-19 infection. A comprehensive post-acute COVID-19

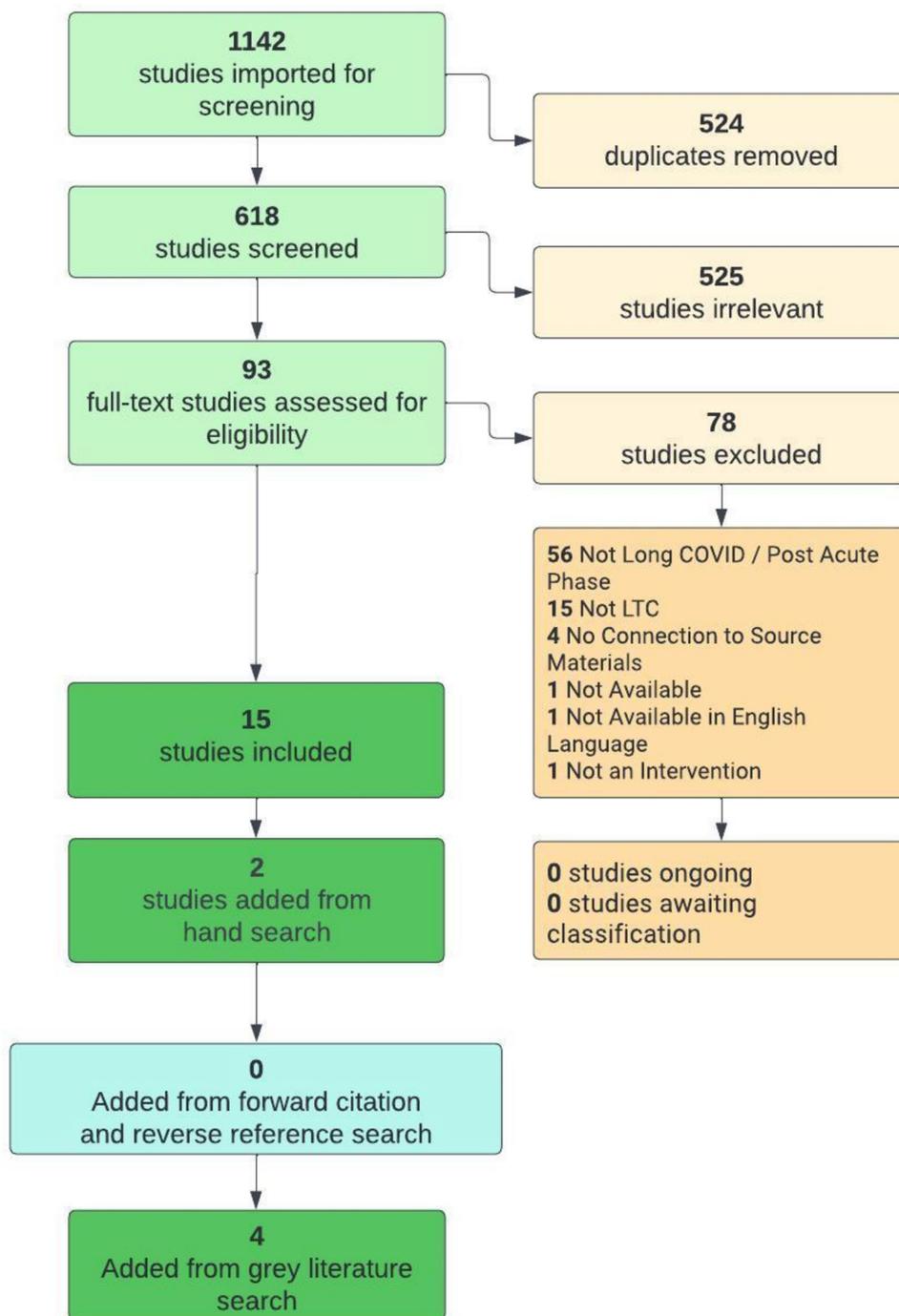


Figure 1 PRISMA flow diagram. LTC, long-term care; PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

assessment includes: pain,²⁰ physical, cognitive, psychological and psychiatric symptoms as well as functional abilities.⁵ In addition, blood tests and a full blood count and kidney, liver and thyroid function tests are recommended to rule out or confirm other conditions.⁵ Ruling out or confirming other conditions is especially important due to the high levels of multimorbidity among LTC residents.²⁵ Another recommendation for this population is a medication review to minimise polypharmacy.²⁶

C-M-O-C: If an LTC multidisciplinary care team aligns with organisational commitment, directives and capacity

to holistic, resident-centred care (C); it will carry out comprehensive post-acute COVID-19 assessments and care planning with residents and carers (O), due to *accountability* (M).^{5 19}

C-M-O-C: If an LTC home has relevant directives, alignment and organisational capacity to provide long COVID resident recovery (C), multidisciplinary teams will be able to provide safe and holistic care (physical, psychological, social) (O) due to organisational *accountability* to quality care (M).^{5 16}

Table 1 Characteristics of included sources

Author and year	Country	Source type	Peer-reviewed or Grey literature
Alonso-Lana, 2020 ⁵³	Spain	Literature review	Peer-reviewed
Badone, 2021 ⁵⁴	Canada	Qualitative study	Peer-reviewed
Blaszczyk, 2022 ²⁶	USA	Quantitative study	Peer-reviewed
Cortes Zamora, 2022 ⁵⁵	Spain	Quantitative study	Peer-reviewed
Devi, 2022 ¹⁶	UK	Qualitative study	Peer-reviewed
Greco, 2021 ¹³	Italy	Quantitative study	Peer-reviewed
Grund, 2022 ³¹	Germany	Literature review	Peer-reviewed
Gutenbrunner, 2021 ⁵⁶	Germany	Literature review	Peer-reviewed
Kaldy, 2021 ⁵⁷	USA	Professional source	Grey literature
Kuehn, 2022 ³⁴	USA	Professional source	Grey literature
Levere, 2021 ²⁹	USA	Quantitative study	Peer-reviewed
Martinczek, 2020 ³⁰	USA	Letter to the editor	Peer-reviewed
Morgan, 2021 ⁵⁸	USA	Professional source	Grey literature
National Institute for Health and Care Excellence (NICE), 2022 ⁵	UK	Guideline	Grey literature
Quality Insights, 2022a ¹⁹	USA	Professional source	Grey literature
Quality Insights, 2022b ²⁰	USA	Professional source	Grey literature
Sorensen, 2022 ²	Canada	Letter to the editor	Peer-reviewed
Sykora, 2021 ⁵⁹	USA	Qualitative study	Peer-reviewed
Van der Krogt, 2022 ⁶⁰	Netherlands	Quantitative study	Peer-reviewed
Weerahandi, 2022 ⁶	USA	Commentary	Peer-reviewed
Zhang, 2022 ⁶¹	USA	Qualitative study	Peer-reviewed

Professional accountability refers to individual providers' enactment of disciplinary standards of care.²⁷ Professional accountability is related to better practices for LTC residents. An example is LTC staff using non-pharmacological approaches first for the treatment of mild post-COVID pain.²⁰ Other examples can be found below:

C-M-O-C: If LTC staff are aware that residents with long COVID may have significant psychological, social and physical changes (e.g., increased fatigue, increased pain, behavioural changes, weight loss, frailty, diminished activities of daily living) (C), they will implement tailored non-pharmacologic and pharmacological interventions (O), because of greater *situational awareness* for residents' safety needs (M1) and *professional accountability* (M2) for optimising residents' quality of life (see below).

C-M-O-C: If LTC staff are adequately resourced and aware that residents with long COVID symptoms, such as extreme fatigue, are at higher risk of falls (C), they will use energy conservation techniques and environmental adjustments (O), because of greater *situational awareness* for residents' safety needs (M1) and *professional accountability* (M2) for optimising residents' quality of life.¹⁹

C-M-O-C: If LTC staff are adequately resourced and aware that residents with long COVID symptoms may experience post-COVID pain syndrome (C), they will tailor pharmacological and non-pharmacological pain interventions to each residents' pain behaviours (O), because of greater *situational awareness* of residents' pain management needs (M1) and *professional accountability* (M2) for optimising residents' quality of life.²⁰

C-M-O-C: If LTC staff are adequately resourced and aware that residents with cognitive impairment and long COVID symptoms may exhibit challenging behaviours (C), they will tailor non-pharmacological and pharmacological interventions to best manage residents' psychological and emotional duress (O), because of greater *situational awareness* for residents' care needs (M1) and *professional accountability* (M2) for optimising residents' quality of life.²⁸

C-M-O-C: If LTC staff are adequately resourced and aware that COVID-19 survivors have higher rates of frailty, unintentional weight loss and worsening functional ability (C), they will implement tailored strategies to address malnutrition and deconditioning (O), because of improved *situational awareness* for resident trajectories (M1) and *professional accountability* (M2) for optimising residents' quality of life.^{13 29–31}

Vigilance

Ongoing monitoring for change in resident status requires vigilance.^{32 33} Monitoring long COVID residents would ensure that: (a) worsened functional ability are flagged for further assessment and care⁵ and (b) developing physical and/or psychological symptoms such as tiredness, fatigue and lack of concentration can be efficiently recognised and referred for more in-depth clinical investigation.⁵ Vigilance is especially critical in LTC because identifying the 'signals' of long COVID versus symptoms of underlying multimorbidity is particularly difficult. Especially considering long COVID is not the only condition associated with health deterioration (e.g., multiple sclerosis, arthritis, Parkinson's Disease). Vigilance is critical, given the volume of residents with possible long COVID after a COVID-19 outbreak situation.

C-M-O-C: When healthcare providers in LTC homes perform frequent monitoring of LTC residents (C) holistic care interventions will be more readily mobilised for COVID-19 survivors (O), due to *vigilance* towards any changes in residents' status (M).^{5 19 34}

In the UK, during and post-pandemic, an adapted monitoring tool was used to identify early warning signs of residents' physical and mental decline.³⁵ The UK National Early Warning (NEWS) tool measures six parameters including vital signs, such as respirations and level of consciousness. If the NEWS scores change during regular assessments, a more in-depth team-based assessment is triggered. A LTC NEWS tool has been introduced throughout UK LTC settings to reduce unnecessary decline and hospital admissions.³⁶

Empathetic listening

Empathetic listening is a therapeutic communication 'tool' that complements vigilance. Empathetic listening, also known as active or reflective listening, is taught within health discipline programmes as an important way to establish trusting relationships with patients and families.³⁷ Despite the importance of understanding the patient experience for assessment, diagnosis and treatment efficacy, healthcare emphasis on efficiency has minimised the importance of empathetic listening.³⁸ In LTC settings, the absence of empathetic listening may be attributed to budget priorities and to lack of training among non-regulated staff, such as care aides who comprise the majority of direct care providers.³⁹ In a time-motion study of care aides in one Canadian LTC home, care aides typically spent short segments of time on personal care needs (e.g., bathing, toileting and feeding). Time spent sitting down and actively listening was less than 1% of their time. In addition, assisting residents in peer social interactions and physical activities was limited due to short, structured time intervals for care delivery. The authors recommended a cultural shift from a task-oriented culture to a relational one, given the importance of quality relationships among peers and caregivers with respect to quality of life.³⁹ A qualitative study on LTC residents' meaning and purpose in everyday life found that

meaningful communication, often manifested as empathetic listening by care providers, was of great significance to residents. Everyday life had more purpose to residents when they felt their needs and preferences were being heard and respected by direct care staff.⁴⁰

C-M-O-C: By regularly engaging in conversations with families and residents (C) healthcare providers will be situationally aware of changes in residents' health trajectory (O) by *empathetically listening* to family and resident concerns (M).^{5 19}

DISCUSSION

This RRR has uncovered evidence-based contextual factors and underlying mechanisms at different systems levels associated with enhanced outcomes for long COVID LTC residents. The C-M-O-Cs, for example, address the need for organisational commitment and capacity to provide the necessary resources associated with quality care for residents who can decline quickly. Validated tools, such as the UK NEWS tool, can be easily integrated into care aide and clinician routines with appropriate training; accompanied by effective communications and team-based clinical decision-making that includes the residents and families. Early intervention studies with LTC NEWS training and implementation have had initial successes, including care home staff empowerment and resident advocacy.³⁵ These studies have shown that one important determinant of effectiveness in addition to ongoing training and support, was access to on-site clinicians, such as nurse clinical specialists and educators, who could validate care aide findings and quickly identify individual residents' needs.³⁵

Earlier research from Sweden focused on the importance of 'soft signs', such as reduced appetite for a favourite food. They found that care aides were well placed to make these significant observations. Care aides astutely noted potential signs of infection, such as increased aggressiveness, restlessness, confusion and decreased appetite.⁴¹ Care aides' assessments of clinical deterioration can add to teams' situational awareness when they are valued and included as important team members. Empowerment of LTC staff, especially care aides, is associated with improved staff and resident experiences; as well as a culture shift from task-based care to relational care (e.g., empathetic listening).^{42 43}

One Canadian study on creating cultures of care in LTC settings developed 'an empowerment pyramid of person-centred care' that stresses the importance of using a systems-level approach to culture change.⁴⁴ The researchers stressed that the pyramid begins with empowered organisational leaders in LTC. Empowered leaders advocate for adequate staffing and resources and ongoing professional development associated with high-quality LTC. These leaders also serve as role models for flattening organisational hierarchy and promoting egalitarian, team-based approaches to care. From a quality/safety perspective, leaders can also promote care delivery

models that allot requisite time and space for building situational awareness among teams and care providers' increased capacity for vigilance and empathetic listening.^{44 45}

Cognitively able residents can express their own needs and concerns through conversations with their care providers,⁴⁰ and family members are another untapped resource of information, especially when their loved ones have dementia. High-quality care relies on trusting partnerships between families of residents and LTC homes. These relationships were significantly strained during the COVID-19 pandemic.⁴⁶ Consideration of vital family presence and input for long COVID residents needs to be established in organisational policies and protocols, and there need to be renewed efforts to 'systematically incorporate the perspectives of caregivers themselves'⁴⁷ (p. 429) who have firsthand knowledge of their loved ones' soft signs. Post-pandemic, family member recommendations have helped to decrease the chasm in care that occurred during the pandemic. Family insights have contributed to better protection from infection, improved communications with staff and greater holistic care and support of their loved ones.^{46 47} Lessons learnt from the pandemic need to be translated into long COVID care, and families and residents can play integral roles in ensuring translation of lived experience to policy and practice.

This RRR synthesis of findings corroborates the trend in geriatric care to implement interventions that are holistic and resident-centred.^{48 49} Despite limited resources in many LTC homes, the purposeful literature we located and cited in this discussion indicates that limited health human resources can be optimised through basic empowerment strategies, training and support by a few accessible nurse educators and specialists. This study represents a first step in distilling the current state of literature into a format that decision-makers and staff in LTC can use to better understand the impact of long COVID and conduct tangible interventions. This study also provides evidence-based tools and strategies to improve the quality of life of residents with long COVID symptomatology in LTC.

Summary of key findings

Now that COVID-19 is endemic⁵⁰ and COVID-19 vaccines are readily available throughout much of the world, the current threat of mortality due to COVID-19 has lessened somewhat. However, the threat of *long COVID* is still present. This is particularly relevant to the most vulnerable, including those who reside in LTC homes.⁵¹ Since residents with long COVID require more care,⁶ aware decision-makers must be accountable for implementing policies that support evidence-based practices. Similarly, situationally aware LTC staff must be professionally accountable for regular assessments and monitoring so that interventions can occur sooner.⁵ Comprehensive post-acute COVID-19 assessments need to be implemented in LTC at 4–6 weeks⁵ after the initiation of COVID-19 symptoms or from the return of an acute care setting. These assessments must be comprehensive since

more than 200 long COVID symptoms have been indicated⁷ and because other conditions need to be ruled out among the multimorbidity-laden LTC population.²⁵ LTC staff must be vigilant, therefore, in monitoring COVID-19 survivor residents for any changes in their health trajectories. Team assessments and interventions need to include care aides' observations; and empathetic listening by team members are necessary to capture the voice of residents and families.⁴⁶

Strengths and weaknesses

To date, there are no other RRRs on long COVID in LTC. A strength of the realist approach is the utilisation of diverse sources of information. Without the inclusion of grey literature, and sources such as the NICE, Royal College of General Practitioners (RCGP) and Scottish Intercollegiate Guidelines Network (SIGN) guidelines, this review would have had many gaps because peer-reviewed literature on long COVID in LTC is sparse. More than half of 51 extracted data segments of this RRR were from grey literature sources. This also represents a limitation of the study, in that much of the data for our C-M-O-Cs came from four rich sources of grey literature. We had a robust search process and subject matter experts to refine and to validate our final programme theory.

Implications for clinicians and policy-makers

Despite the lack of a formal diagnosis, understanding long COVID among LTC residents is important because of the increased care needs that COVID-19 survivors require.⁶ As of September 2021, 99% of LTC homes surveyed in the USA reported staffing shortages.⁵² Lack of organisational and staff capacity requires political and decision-maker support so that trained, resourced staff can proactively assess and treat LTC long COVID residents early, avoiding health deterioration and intensive resource use.

Unanswered questions and future research

More peer-reviewed studies need to focus on long COVID in the LTC sector. This review found 15 peer-reviewed articles with data on interventions that could be extracted. Further questions remain about holistic care interventions to improve quality of life based on diverse long COVID signs and symptoms, such as cognitive impairment.

CONCLUSION

Just like COVID-19 itself, long COVID is a worldwide health emergency. In the beleaguered LTC sector, long COVID among residents represents a need for even greater care provision.⁶ Awareness, accountability, vigilance and empathetic listening are key mechanisms underlying holistic, resident-centred LTC. This RRR offers information for different systems levels to improve care delivery and hopefully, quality of life among LTC residents with long COVID as well.

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Contributors AM, JS and VAC conceived the project and revised it critically for intellectual content. SC developed the initial program theory with literature from IF, IF, JS, SC, MM, AA-P, VAC, SF, KD, JW, BS, AB and AM contributed to the research process through attending regular reference group meetings, interpreting data and providing valuable critical feedback for intellectual content. IF conducted the searches. SC and MM advised on realist methods. IF and AA-P screened the academic literature at the title, abstract, and full-text level in COVIDENCE. IF searched for and screened the grey literature. IF conducted journal hand searches. IF and AA-P conducted the data extractions. IF, AA-P, SC and MM conducted the data analysis/synthesis. SC and IF conducted the expert panel meetings. JS is the guarantor. All team members contributed to drafting this article for publication and approved the final draft for submission.

Funding COVID-19 Pandemic Response and Impact Grant (Co-RIG) Program of the Foundation for Advancing Family Medicine and the Canadian Medical Association Foundation, grant/award number: FAFM-2021-0094-EN_Mithani

Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

Ethics approval Ethical approval was deemed unnecessary by the Fraser Health Research Ethics Board because the study sources are legally accessible to the public and appropriately protected by law.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement All data relevant to the study are included in the article or uploaded as online supplemental information. Protocol, program theory and glossary available from the cIRcle repository, DOI: <http://hdl.handle.net/2429/83914>.

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